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Current Trends

Influenza — United States, 1985-1986 Season

The 1985-1986 influenza B epidemic that peaked in February 1986 was the largest influenza B epidemic in the United States since the 1968-1969 influenza season. It was caused primarily by virus strains that were antigenically distinct from preceding strains. Large numbers of outbreaks occurred in schools, and many adults were also affected. Influenza A(H3N2) viruses also circulated and were isolated with about one-third the frequency of influenza B. However, type A(H3N2) was the predominant influenza virus isolated from persons over 64 years old. Type A(H1N1) virus was rarely isolated. Surveillance data from 121 cities indicated that excess pneumonia and influenza (P&I) mortality occurred during the epidemic, although to a lesser extent than during the previous season. Most of the P&I mortality occurred in the over-64-year age group, from which type A(H3N2) virus was most frequently isolated. Some sporadic cases and a few small clusters of deaths due to myocarditis or other conditions producing a toxic-shock-like syndrome were reported among previously healthy children and adults in association with influenza B outbreaks (*1*).

National data on influenza activity for the 1985-1986 season were obtained from four major sources: (1) weekly reports of the number of respiratory specimens tested and the number and types of influenza virus isolates identified by 63 collaborating state, county, city, or military laboratories; (2) weekly reports of mortality from 121 cities, including deaths associated with P&I, an index that has historically reflected seasonal influenza-attributable mortality; (3) weekly semiquantitative estimates from each state health department of the extent of influenza-like morbidity indicated by its statewide surveillance system; and (4) weekly reports from approximately 125 physician members of the American Academy of Family Physicians Research Panel who recorded the number of patients seen in their offices with influenza-like illnesses. In addition, CDC also received spontaneous reports of unusual influenza cases and outbreaks from a variety of sources.

The first influenza isolates were type A(H3N2) strains from sporadic cases in Texas and Alaska in September and single isolates from Rochester, New York, and Houston, Texas, in October. Single isolates of type A(H1N1) and type B viruses were also reported in October from Hawaii and Houston, respectively. In mid-November, Alaska began reporting outbreaks

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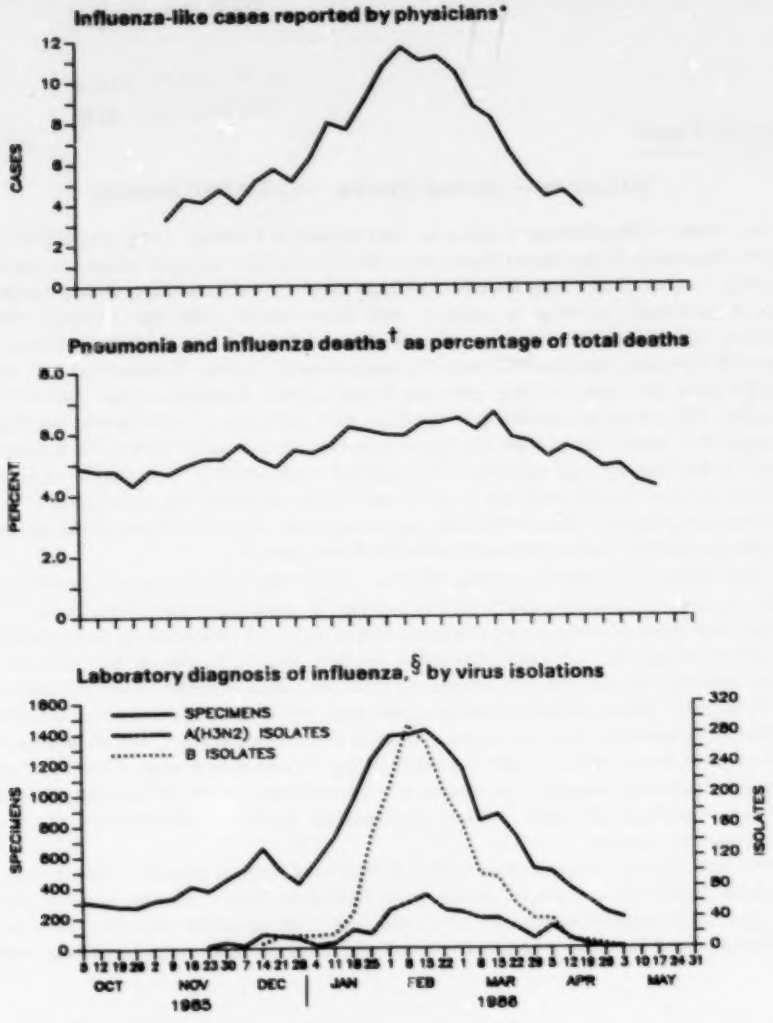
FIGURE 2. Indicators of influenza activity, by week — United States, 1985-1986



*Reported to CDC by approximately 125 physician members of the American Academy of Family Physicians. A case was defined as a patient with fever 37.8 C (100 F) or greater and at least cough or sore throat.

†Reported to CDC from 121 cities in the United States. Pneumonia and influenza deaths include all deaths where pneumonia is listed as a primary or underlying cause or where influenza is listed on the death certificate.

§Reported to CDC by WHO Collaborating Laboratories (including military sources).

of influenza-like illness initially caused by type A(H3N2) viruses but later associated with an increasing proportion of influenza B viruses. The level of activity in Alaska increased to widespread outbreaks by late November and remained widespread until early January. Although Hawaii began reporting influenza outbreaks associated with type A(H3N2) in late December, general increases in influenza activity in the nation did not occur until January, when outbreaks of influenza B, particularly in schools, rapidly increased. Further spread of type A(H3N2) virus also occurred, and by the end of January, when 18 states were reporting regional or widespread outbreaks of influenza-like illness, type B viruses had been identified in 31 states, and type A(H3N2), in 19 states.

Virus isolations peaked in early February in parallel with the peak in reports of influenza morbidity from physicians (Figure 2). Activity began to decline in late February and decreased to preseason levels early in April.

A total of 2,313 isolates were reported by the collaborating laboratories, more than for any season in the last 10 years (Figure 3). By the end of the season, type B virus had been isolated from every state and the District of Columbia (Figure 4). Type B virus accounted for 75.7%, and type A(H3N2) virus, for 24.2%, of the reported isolates. Antigenic analysis of influenza B isolates revealed variation from prior strains (2). As in 1984-1985, type A(H1N1) viruses were isolated rarely—from a few individuals with sporadic cases in Texas and from one person in Hawaii. Only 3.9% of type B viruses reported by the collaborating laboratories were isolated from persons over 64 years of age, compared with 20.7% of type A(H3N2) viruses (Table 2).

By the end of the season, 43 states and the District of Columbia had reported widespread or regional outbreaks (Figure 5), compared with the 36 and 37 states reporting outbreaks during the two preceding seasons. P&I deaths reported for surveillance purposes by the 121 cities peaked at 6.3% of total deaths in late February, lower than the peak of 7.2% for the previous season, when type A(H3N2) viruses predominated (Figure 2).

Influenza outbreaks in nursing homes were caused both by types A(H3N2) and B viruses. The relative frequency of these virus types among nursing-home residents is not known, as influenza-like outbreaks in such populations are not routinely reported, and laboratory confirmation is not routinely sought.

Reported by State and Territorial Epidemiologists; State Laboratory Directors; U.S. School of Aerospace Medicine, San Antonio, Influenza Research Center, Baylor College of Medicine, Houston, Brooke Army Medical Center, Fort Sam Houston, Texas; Milwaukee Health Dept Virus Laboratory, Wisconsin, Allegheny County Health Laboratory, Pittsburgh, Pennsylvania; Sunrise Hospital Virology Laboratory, Las Vegas, Nevada; Virology Section, Children's Hospital, Washington, DC; Montefiore Hospital and Medical Center Virus Laboratory, Kings County Hospital, New York City, Nassau County Medical Center Virology Laboratory, East Meadow, Erie County Medical Center Virology Laboratory, Buffalo, University of Rochester Medical Center, Rochester, New York; Charity Hospital Virology and Rickettsial Laboratory, New Orleans, Louisiana; Mayo Clinic Virology Laboratory, Rochester, Minnesota; Veterans Administration Hospital Virus Laboratory, West Haven, Connecticut; Dept of Pediatrics, University of Chicago, Illinois; University of Arizona Health Svc Center Virology Laboratory, Tucson; Letterman Army Medical Center, San Francisco, Los Angeles County Health Dept Virology Laboratory, Los Angeles, Public Health Laboratory, San Diego, California; University of Colorado Medical Center Virus Laboratory, Denver, Virology Div, Children's Orthopedic Hospital, Seattle, Washington; participating physicians of the American Academy of Family Physicians; Statistical Svcs Br, Div of Surveillance and Epidemiologic Studies, Epidemiology Program Office, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

References

1. CDC. Toxic shock syndrome associated with influenza—Minnesota. MMWR 1986;35:143-4.
2. CDC. Update: influenza activity—United States—and influenza type B virus drift. MMWR 1986;35:92-4.

FIGURE 3. Isolation of influenza viruses reported to CDC by collaborating civilian and military laboratories — United States, 1976-1986

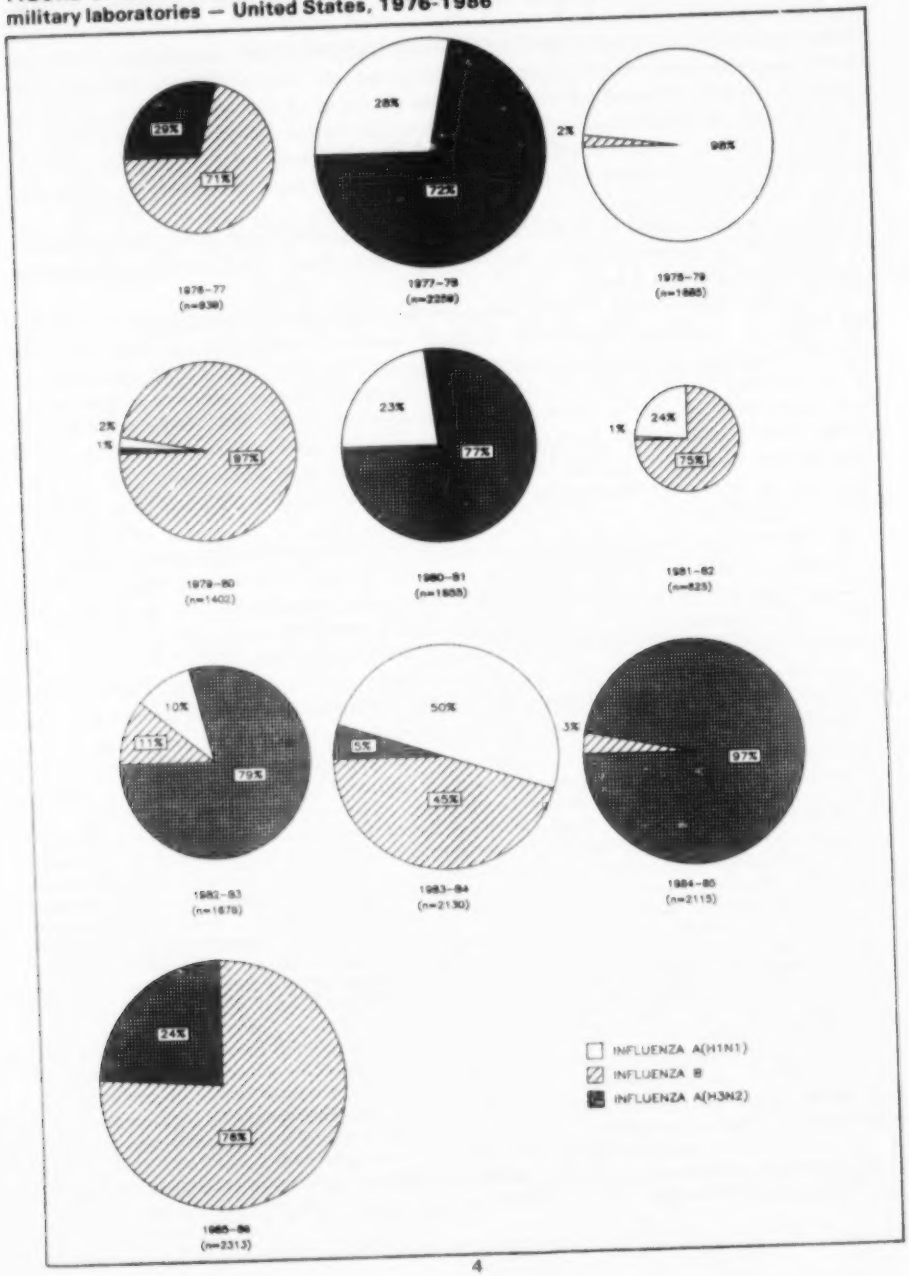


FIGURE 4. Cumulative summary of states with influenza virus isolates reported, by date of first official notification — United States, 1985-1986 season

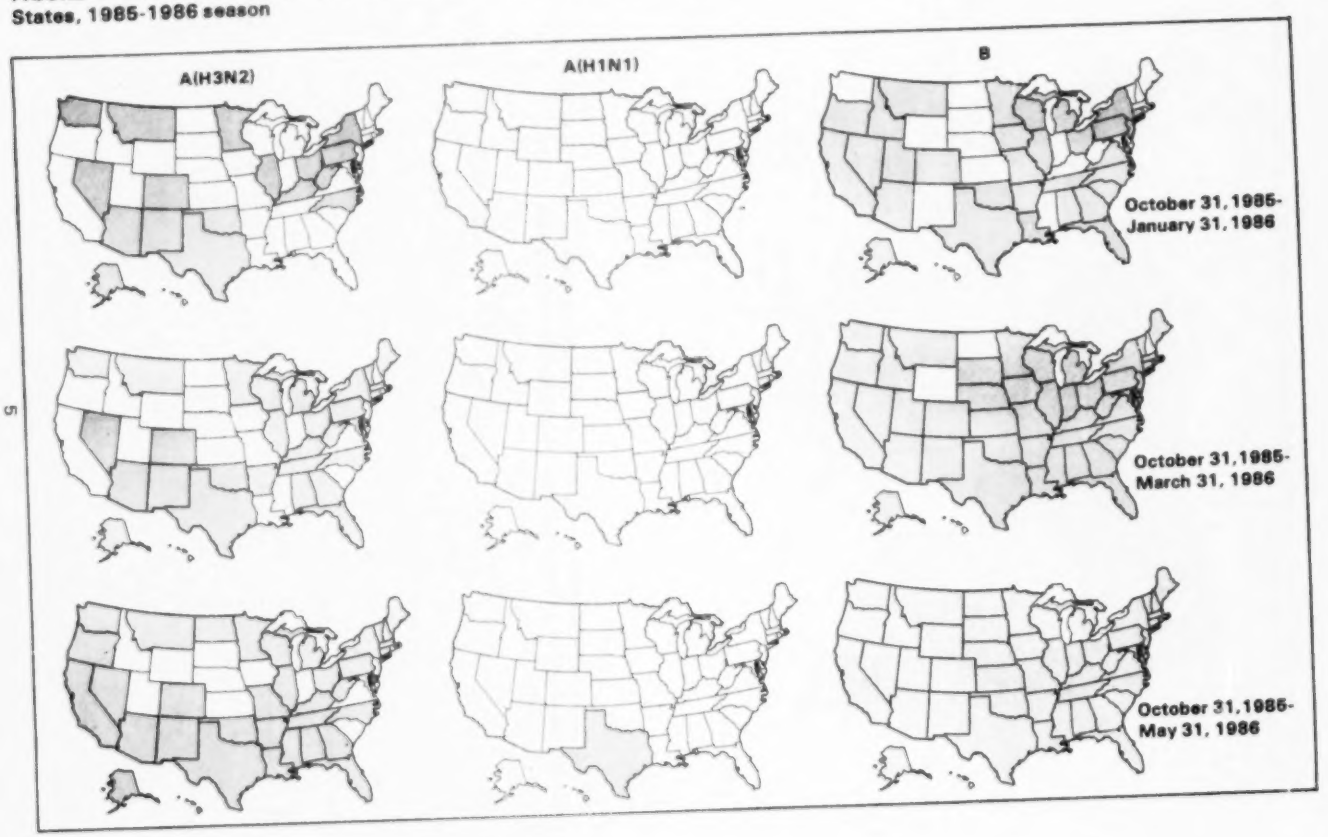


FIGURE 5. Highest level of influenza morbidity reported, by state — United States, November 1985-June 1986

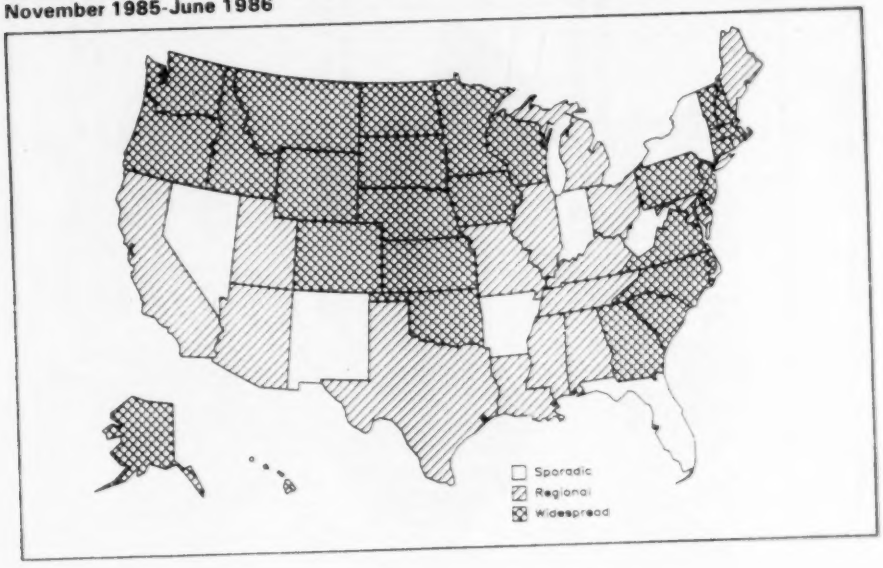


TABLE 2. Specimens tested and influenza viruses isolated as reported to CDC by collaborating laboratories — United States, October 1985-May 1986

Age group (yrs.)	Laboratory report (no. [%])							
	Specimens tested		Type A(H1N1)		Type A(H3N2)		Type B	
< 20	11,007	(55.4)	1	(100.0)	216	(38.6)	941	(53.7)
20-64	4,845	(24.4)	0	(0.0)	114	(20.4)	485	(27.7)
> 64	1,214	(6.1)	0	(0.0)	116	(20.7)	68	(3.9)
Not specified	2,820	(14.2)	0	(0.0)	114	(20.4)	258	(14.7)
Total	**19,886**	**(100.0)**	**1**	**(100.0)**	**560**	**(100.0)**	**1,752**	**(100.0)**